What is Claimed is:

Sub A+1 B1

1. A method of transmitting data over a medium, the method comprising the step of:

obtaining a back-off delay window for retransmitting a data packet, the back-off delay window obtained being based upon a number of unsuccessful transmissions of the data packet or a predetermined initialized value, and wherein the obtained back-off delay window is less than two times a subsequent back-off delay window.

2. The method according to claim 1, wherein the obtained back-off delay window is found using a lookup table.

3. The method according to claim 2, wherein the lookup table comprises predetermined back-off delay window values determinable based upon a number times a given data packet is unsuccessfully transmitted.

4. The method according to claim 1, wherein the obtained back-off delay is determined formulaically.

5. The method according to claim 4, wherein if the number of unsuccessful transmissions of the data packet or the predetermined initialized value is an odd integer value, the formula for obtaining the back-off delay is $2^{((i + 1)/2)}$, where i represents the number of unsuccessful transmissions of the data packet or the predetermined initialized value.

6. The method according to claim 4, wherein if the number of unsuccessful transmissions of the data packet or the predetermined initialized value is an even integer value, the formula for obtaining the back-off delay is $(2^{(2/i)} + 2^{((i+2)/2)})/2$, where i represents the number of unsuccessful transmissions of the data packet or the predetermined initialized value.

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7. A method of transmitting data over a medium, the method comprising the step of:

obtaining a back-off delay window for retransmitting an unsuccessfully transmitted data packet, the back-off delay window being obtained based upon a number of unsuccessful transmissions of the data packet or a predetermined initialized value, and wherein the obtained back-off delay window is equal to a subsequent or future back-off delay window.

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8. The method according to claim 7, wherein the subsequent back-off delay window is a back-off delay window which occurred immediately prior to the obtained back-off delay window.

9. The method according to claim 7, wherein the future back-off delay window is a back-off delay window which occurs immediately following the obtained back-off delay window.

10. The method according to claim 7, wherein the obtained back-off delay window is found using a lookup table.

11. The method according to claim 10, wherein the lookup table comprises predetermined back-off delay window values determinable based upon a number of times a given data packet is unsuccessfully transmitted.

12. The method according to claim 7, wherein the obtained back-off delay is determined formulaically.

13. The method according to claim 12, wherein the formula for determining the obtained back-off delay contains a function for converting a non-integer value to an integer value.

14. The method according to claim 13, wherein the function coverts the non-integer value to a smallest integer value which is greater than the non-integer value.

15. The method according to claim 12, wherein if the number of unsuccessful transmissions of the data packet or the predetermined initialized value is an even integer value, the formula for obtaining the back-off delay is $2^{(i/2)}$, where i represents the number of unsuccessful transmissions of the data packet or the predetermined initialized value.

16. The method according to claim 12, wherein if the number of unsuccessful transmissions of the data packet or the predetermined initialized value is an odd integer value, the formula for obtaining the back-off delay is $2^{((i\ +\ 1)/2)}$, where i represents the number of unsuccessful transmissions of the data packet or the predetermined initialized value.

17. The method according to claim 12, wherein if the number of unsuccessful transmissions of the data packet or the predetermined initialized value is an even integer value, the formula for obtaining the back-off delay is $(2^{(2/i)} + 2^{((i+2)/2)})/2$, where i represents the number of unsuccessful transmissions of the data packet or the predetermined initialized value.

18. A method of transmitting data over a medium, the method comprising the steps of:

transmitting a data packet without contention; and

decreasing a back-off delay window for transmitting a next data packet, the decreased back-off delay window resulting in an obtained back-off delay window being greater than a smallest back-off delay window, and wherein the decrease in the back-off delay window is based upon a variable integer value or an predetermined value.

19. The method according to claim 18, wherein if the obtained back-off delay window is less than a predetermined minimum back-off window, the obtained back-off delay window is set equal to a predetermined minimum back-off window.

20. The method according to claim 18, wherein the obtained back-off delay window is found by subtracting two from a variable value corresponding a number of unsuccessful transmissions of a previously transmitted data packet, the resulting difference is then applied to a formula to generate the obtained back-off delay window.

21. The method according to claim 20, wherein for an even difference the formula is $2^{(i/2)}$.

22. The method according to claim 20, wherein for an odd difference the formula is $2^{((i+1)/2)}$.

23. The method according to claim 20, wherein for an even difference the formula is $(2^{(2/i)} + 2^{((i+2)/2)})/2$.

24. The method according to claim 18, wherein the obtained back-off delay window is found by subtracting two from a variable integer value corresponding the number of unsuccessful transmissions of a previously transmitted data packet, the resulting difference is then applied to a lookup table containing back-off delay window values to thereby reference a corresponding back-off delay window.